

which they are washed in order to free them from the matter that still adheres and binds them together. They are now laid out to dry and bleach on rude frames of split bamboo. The process of steeping, washing, and exposing to the sun is repeated for some days until the fibres are considered to be properly bleached. Without further preparation they are sent into town for exportation to China.

Nearly all the islands near Singapore are more or less planted with pineapples, which at a rough estimate cover an extent of two thousand acres. The enormous quantity of leaves that are annually suffered to putrefy on the ground would supply fibre for a large manufactory of valuable pina cloth. The fibre should be cleaned on the spot. Fortunately the pineapple planters are not Malays, but industrious and thrifty Bugis, most of whom have families. These men could be readily induced to prepare the fibres. Let any merchant offer an adequate price, and a steady annual supply will soon be obtained.—*From the Journal of the Indian Archipelago and Eastern Asia*, No. 8, Aug. 1848.

Advantages accruing from the Study of Entomology.

To estimate in their true extent the important bearings of Entomology on our pecuniary interests, we must not confine our attention to the hundreds of thousands of pounds which we annually lose from the attacks of the hop-fly, the turnip-flea, the wire-worm, the weevil, and the host of insect-assailants of our home agricultural and horticultural produce, but we must extend our views to our colonies, and we shall there find that in Australia the potato crops (as we learn from Mr. Thwaites) are in some quarters wholly cut off by the potato-bug; that in the West Indies, in addition to the numerous and long-known insect-enemies of the sugar-cane, a new pest of the *Coccus*-tribe, sent us by Dr. Davy, has lately attacked it in Barbados, and the cocoa-nut trees in the same island have nearly fallen a sacrifice to a minute *Aleyrodes* referred to by Sir Robert Schomburgk; while in India the cotton crops are often seriously injured by insects of various tribes, whose history we have yet to learn; and in Ceylon, the Governor, Lord Torrington, states, in a letter addressed last year to Earl Grey, so serious have the attacks of the "Coffee-bug" (a species of *Coccus* or scale-insect, said to be allied to *C. Adonidum*) proved for the last few years to the coffee-plantations, that the produce of one estate, which had in former years been 2000 cwt. of coffee, fell suddenly to 700 cwt. wholly from the destruction caused by the bug; and a similar heavy loss as to other coffee-plantations is confirmed by Mr. Gardner, who speaks of the insect as not confining its ravages to these, but spreading to other trees and plants, as limes, guavas, myrtles, roses, &c., so that in the Ceylon Botanic Garden there is scarcely a tree not in some measure affected.

It appears highly probable, from facts collected by Mr. Gardner, and quoted in the 'Gardener's Chronicle' of Oct. 7, 1848, p. 667, that this coffee-bug was introduced into Ceylon with some Mocha coffee-plants brought from Bombay; and it is equally probable, as

Dr. Lindley suggests, that had the foul plants been all burnt, or dipped in hot water, so as to kill the bugs, the Ceylon coffee-planters might have been saved from their present painful position. But why were not these precautions taken? Simply because these coffee-planters are wholly ignorant of entomology. When Kalm, the Swedish naturalist, descried specimens of *Bruchus Pisi* disclosed in a parcel of peas he had brought from North America, he was thrown into a state of trepidation lest some of these pestilent insects should have escaped, and he should have been thus the unconscious instrument of introducing so great a calamity into his beloved country. And had the Ceylon coffee-planter, to whom these infected Mocha-plants came, possessed a far less amount of entomological knowledge than Kalm, he would have carefully examined them, aware how easily a new insect-pest may be introduced from a foreign country, and of what vital importance it is that it should be ascertained that such introduced plants are free from disease, or thoroughly cleansed from it, if present.

Here we have a further striking instance how desirable it is, as I have before contended, that some instruction in Natural History, and in Entomology as a branch of it, should be universally given in all our schools, from the highest to the lowest. Not only may a landed proprietor at home suggest to his tenants, or a country clergyman to his flock, the best way of destroying their insect-enemies; but if our middle classes, likely to become in the course of their emigrations to our colonies, now every year more extensive, coffee-planters in Ceylon, or cotton-growers in India, or general agriculturists in Canada, Australia, or the Cape, were taught something at school of the history of these assailants, as well as the working-men who accompany or assist them, there can be no doubt that this branch of their school education would turn to far more pecuniary advantage than much of what is now taught them.

In adverting to this subject in my last year's Address, I pointed out how little merely "practical" but unscientific men are qualified to cope with the insect-hosts that assail them on every side, and I quoted the remarkable instance, which cannot be too often repeated, of the 240,000*l.* a-year which M. Guérin-Méneville, the distinguished French entomologist, has saved the olive-growers of the south of France by teaching them a mode, founded on the economy of the olive-fly (*Dacus Oleæ*), of neutralizing the attacks of this pest, of which, in spite of all their practical skill, they were the annual victims to this large amount. I will conclude these remarks with referring to the prospect we now have of seeing our hop-plantations freed from their great destroyer the hop-fly (*Aphis Humuli*)—not from the efforts of the hop-growers, who considering it "a blight" brought by some cold wind or atmospheric change, fold their arms in helpless apathy; but in consequence of the investigations into the history and economy of the insect by an eminent British entomologist, Mr. Francis Walker*, who has attended very closely to this

* Annals of Nat. Hist. 1848, vol. i. p. 373.

tribe. The difficulty in the case of the hop-aphis has always been to know where the eggs from which the flies proceed in spring, are placed by the gravid females in autumn. This could not be on the hop-plant, which dies down yearly to the roots. But the mystery has been solved by Mr. Walker, who has found that it is on the *sloe-tree* or *black-thorn* (*Prunus spinosa*) that the female deposits her eggs in autumn, which are there hatched in spring, and the second generation being produced with wings, flies to the hop-plants and establishes itself on the leaves, which, owing to the well-known rapid increase of these insects, it soon covers and exhausts of the sap. Now if the hop-aphis does not deposit its eggs on any other shrub or plant than the sloe, as Mr. Walker believes, it is evident that, to secure the hops in any district from the hop-aphis, it is only necessary to destroy all the sloe-trees, which, as they are found chiefly in hedges, and there in no great number, would be no difficult matter. And if, from the escape of a part of the sloe-trees, and the flight of some of the hop-aphides from distant quarters, a few of the female aphides were still found on the hop-plants in spring, nothing would be easier, as I ascertained by experiments in hop-grounds in Worcestershire in 1838*, than to clear them from every one of these assailants, at a very trifling expense, by employing women and children, by means of step-ladders, to crush every aphis found, by pressing them and the leaf between the thumb and fore-finger, so as to destroy the flies without injuring the texture of the leaf. When it is considered that the extirpation of the hop-aphis would in some years save 200,000*l.* to the revenue, and three or four times as much to the hop-growers, it is evident that this is a matter worth attention, and that the science which can effect this saving is no trifling one.—*From the Address delivered by the President W. Spence, Esq., F.R.S., at the Anniversary Meeting of the Entomological Society of London, Jan. 22, 1849.*

Description of a new Mexican Quail. By WILLIAM GAMBEL, M.D.

Ortyx thoracicus. With a full, somewhat pointed crest, the feathers of which are black, obscurely mixed with dull brown and rufous. Nape mottled with black and bright rufous, and traversed by two interrupted white lines, which commence of a cinereous colour about the front and pass over the eyes. Throat and cheeks pale cinereous, each feather with a narrow black margin. Sides of neck, breast and sides pale rufous; deepest on sides of neck, where the feathers have a few scattered black spots. Lower part of belly and vent white. Under tail-coverts rusty white, mottled with black. Tail very short and rounded, its colour dark brown, with freckled irregular bars of rusty white. Lower part of back and upper tail-coverts irregularly variegated with different shades of gray, fulvous and black; upper part of back dark rufous, the centres of the feathers grayish, and traversed by fine, irregular, dusky lineations. Wings and scapulars beautifully variegated with black, rufous and gray;

* Introd. to Entomology, 6th edit., vol. i. p. 149.